

**CASE WESTERN RESERVE UNIVERSITY**  
 Case School of Engineering  
 Department of Electrical Engineering and Computer Science

**ENGR 210. Introduction to Circuits and Instruments (4)**

Quiz No. 2

9/12/03

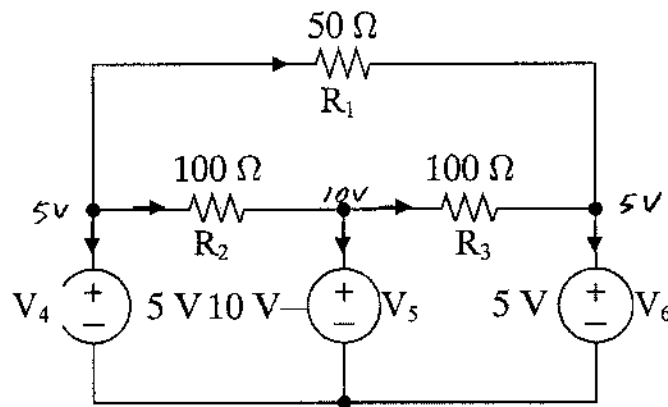
Name (Section):

SOLUTIONS

**PUT ANSWERS IN THE SPACE PROVIDED AND SHOW YOUR WORK**

**Problem 1 (10 points)**

Use KVL, KCL, and element constraints to find the current that flows through each element in this circuit. Use polarities defined by the arrows. Complete the table.



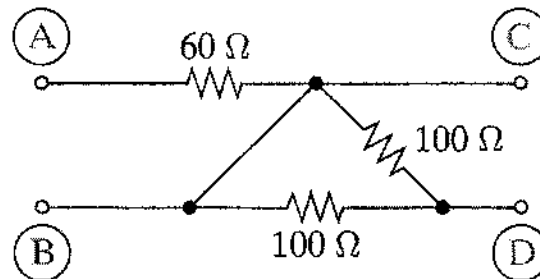
ELEMENT	CURRENT
$R_1$	$I_1 = 0A$
$R_2$	$I_2 = -0.05A$
$R_3$	$I_3 = 0.05A$
$V_4$	$I_4 = 0.05A$
$V_5$	$I_5 = -0.1A$
$V_6$	$I_6 = 0.05A$

} KVL +  $\Omega$ 's law  
 } KCL

(over)

**Problem 2** (10 points)

Find the equivalent resistance between each pair of terminals (with the other two terminals left disconnected). Complete the table.



TERMINALS	RESISTANCE
A-B	$R = 60\ \Omega$
A-C	$R = 60\ \Omega$
A-D	$R = 110\ \Omega$
B-C	$R = 0\ \Omega$
B-D	$R = 50\ \Omega$
C-D	$R = 50\ \Omega$

(over)